alysis following the diphtheria or to the deep ulcers in the trachea opposite the esophagus? The abscess formation might also have been augmented by the aspiration of the foreign material.

To recapitulate: Stage one, as represented by the first two cases, is characterized by mild edema, hemorrhage, beginning ulceration, early fibrinous deposit, emphysema and very early bronchopneumonia. Stage two (Case III) by a marked fibrinopurulent pseudomembrane, more extensive ulceration, emphysema, advanced bronchopneumonia and beginning necrosis. Stage three (Case IV) by ulceration, necrosis and abscess formation, with massive bronchopneumonia. The attempts at healing are revealed by the organization and fibrosis.

It is interesting to speculate on the outcome of a case similar to the fourth should such a case go on to recovery or if the lesions in the trachea should continue to progress. The tracheal ulcerations might easily perforate the wall, resulting in mediastinal abscess. Those in the bronchi near the bifurcation might ulcerate through and through and perforate the aorta. When such ulcers heal, contractures are sure to obtain. These contractures may result in traction diverticulæ of the esophagus. In the parenchyma, organization would occur and result in disseminated patches of fibrosis or even in extensive fibrosis of the lungs resembling healed tuberculous lesions. Some of the bronchioles might be transformed into fibrous cords through the organization of the exudate.

In milder involvement the walls only might go on to a fibrosis of a greater or lesser degree, which would result clinically in a chronic bronchitis. Upon the extent of the injury to the bronchial tree will depend the intensity of the clinical symptoms of convalescent and recovered cases, as manifested by the chronic bronchitis and emphysema. From what has been said above, many cases will undoubtedly present grave clinical difficulties in the differential diagnosis from pulmonary tuberculosis.

CLIMACTERIC HYPERTENSION: A STUDY OF HIGH BLOOD-PRESSURE DURING AND FOLLOWING THE MENOPAUSE.

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In this paper it is my purpose to describe a type of high blood-pressure developing in women at the time of the menopause and possibly the result of it, in which there is no discernible arteriosclerosis, at least, for some years after its onset, no renal involvement and frequently no symptoms of any kind for possibly a decade or longer. In the early stages it is usually overlooked unless some intercurrent disease develops, and thus invites a thorough examination of an otherwise apparent healthy woman. Occasional references have been made in the literature on hypertension to a type occurring in women at the climacteric, but beyond noting the existence of such instances but little has been written.

Clifford Allbutt,[1] in 1903, against the then prevailing opinion that hypertension was always secondary to arteriosclerosis or nephritis, called attention to the fact that the hypertension in a certain proportion of cases was primary and the sclerosis secondary.

In 1914 Stengel,[2] writing on cardiorenal disease, noted cases of primary arterial or arteriolar disease, the onset and early course of which were so insidious that the history furnished little clue to the nature of the disease.

Arteriocapillary fibrosis as described by Gull and Sutton was at that time accepted as adequate to explain many cases of this type of cardiorenal disease, though in these days too much stress is laid upon renal disease as being the constant source of hypertension and of arteriosclerosis. Stengel referred to the frequency of hypertensive cases in which there was "considerable diffuse arterial thickening" (hard vessel walls, increased substernal dulness, ophthalmic findings), and the symptoms of which were almost wholly those of hypertensive cardiac involvement. He noted the occurrence of these cases in persons from forty to fifty years of age, and a greater frequency in women than in men. The patients were robust, with normal blood pictures and normal renal functional tests, the urinary examinations showing traces of albumin and hyaline casts. The high pressure and cardiac embarrassment were the most impressive facts. Thus on good grounds he separated these cases from primary renal disease.

Again, in 1915, Allbutt,[3] in a monograph, described a condition the essential feature and earliest manifestation of which was hyperpiesia or elevated blood-pressure. This has been termed "benign," "essential" or "primary" hypertension, and coincide, with Janeway's "chronic hypertensive cardiovascular disease." Two years later Stengel,[4] in a paper on the "Classification of Chronic Nephritis and the Relation of Infection to Kidney Disease," further clarified the situation by a clear-cut classification of chronic nephritis in which he described "renal sclerosis" as falling into four possible forms, *i.e.*:

1. Primary sclerosis following acute interstitial nephritis.
2. Secondary sclerosis following glomerulonephritis or mixed forms of nephritis.

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[1] Rise in Blood-pressure in Later Life, Med. Chir. Soc., 1903, lxxxvi.

[2] Cardiorenal Disease, Jour. Am. Med. Assn., October 24, 1914, lxiii, 1463-1467.

[3] Diseases of the Arteries, Including Angina Pectoris, 1915.

[4] The Classification of Chronic Nephritis and the Relation of Infection to Kidney Disease. Med. Clin. of North America, September, 1917, p. 217.

3. The terminal sclerotic kidney following arteriolar sclerosis.
4. The atrophic kidney of senile arteriosclerosis.

Stress was laid particularly on the third form, *i. e.*, the form following arteriolar sclerosis, in which the symptoms are not nephritic and the kidney condition and function remained unimpaired for long periods of time. As in his former paper, he noted the healthy appearance of these individuals and the frequency in which the patient was unaware of any illness. Marked changes in the retinal arterioles and sometimes retinal hemorrhages occurred in these cases. Of further interest he noted the rapid recovery of a man with elevated blood-pressure, albumin and casts, etc., after the cleaning up of pus pockets at the roots of the teeth.

Meara,[5] a year later, presented a series of his own cases, with a general discussion of essential hypertension. He also noted the occurrence of the disease in ruddy, stocky patients with *plethoric habits, active temperament,* live *men* and *women.* He describes them as gourmets if not gourmands, and emphasizes the influence of overeating as a causative factor.

The point which I wish particularly to emphasize from the study of my series of 51 cases of this type is the characteristic development of a type of hypertension in women, with its onset at the menopause or soon after, in which there is little if any evidence of fibrosis of the peripheral vessels, at least, for some years after the onset. The past medical histories in the cases I have selected are strikingly lacking in any of the predisposing or exciting causes of renal sclerosis or chronic nephritis, and this is in marked contrast to many of the cases presented by Meara, who includes a number of male patients. In both his male and female patients there are noticeably present some one or more infections in the past history or even of former attacks of nephritis. In his cases there was frequently a moderate retention of blood-urea nitrogen and at times some reduction in the phthalein. In short, the cases described by both Stengel and Meara would seem to fall well within the group of "renal sclerosis" and the subgroup renal sclerosis following arteriolar sclerosis, but undoubtedly include patients who could be placed in the group which I have selected from several hundred cases of hypertension, and which will now be described.

As mentioned above, the condition is, at times, discovered during the menopause, and at this time it has as its only indication a definite rise in both systolic and diastolic blood-pressure. The height of the pressure was in many of the cases very marked, running up to systolic 230–250–310 and diastolic 130–140–150. On the other hand, in the cases examined early in the course of the disease, pressures as low as systolic 180–190 and diastolic 100–110 were found. Rarely were lower figures noted, the higher ones being the rule.

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[5] Hyperpiesia of Clifford Allbutt, Med. Clin. of North America, July, 1918, p. 1.

As it is at present these cases are frequently discovered in the course of a routine physical examination which has been prompted by some intercurrent disturbance or disease or at the time of a life insurance examination. Unfortunately, they are more frequently discovered several years after the menopause, when, following an indefinite period of vague symptoms, nervous, gastric or cardiac, the patient seeks relief and is surprised to know that her blood-pressure is high, and, by then, even very high. The majority of the cases fall within office rather than hospital practice, and possibly for this reason the literature on the subject is incomplete. Their appearance is strikingly healthy and their weight usually above the average; frequently they are obese. These women, usually from the upper social strata, are energetic, active and inclined to be of an intensely nervous temperament, used to good living and fond of life, but, nevertheless, subject to many worries and anxieties for years, as may be elicited in their histories.

The majority are discovered between the ages of fifty and sixty years, and it is toward sixty years, for the first time, that slight fibrosis of the peripheral vessels is noted, and during this period changes in the retinal arterioles make their appearance and thus occasionally an examination by the ophthalmologist may first reveal the condition.

Of the chief symptoms prompting the patient to consult medical advice, the gastric and nervous groups are the most common, the symptoms falling within the gastric neurosis group, with fermentation and constipation in marked evidence. Then nervousness and pains, chiefly in the limbs, were equally frequent. Headache and evidences of cardiac embarrassment come next in frequency, with finally a few cases complaining of weakness, vertigo, epistaxis, etc. However, headache was present in varying degrees in nearly all patients.

Contrasting this group of complaints with that of a group of renal sclerosis cases, with hypertension occurring in men between the ages of fifty and sixty years, I found that cardiac embarrassment and pain in the limbs had a decided preponderance over all other symptoms, and of equal importance in this differentiation is the fact that the peripheral vessels of the men patients were all markedly sclerosed in contrast to those of the women. Not only was there the difference of sclerosis in peripheral vessels, but also in the retinal arterioles which were involved, as a rule, in the male cases, regardless of age, while in the women the retinal sclerosis occurred in only two groups, the first group being those approaching sixty years or past and the second being represented by the occasional case in which there was a past history of scarlet fever, pneumonia, etc., or in which there was a local focus of infection as cryptic tonsils or diseased roots of teeth.

On the other hand the past medical histories of the men were rich in the recognized causes of arteriosclerosis and nephritis, as rheumatism, pneumonia, scarlet fever, syphilis, typhoid, lead, alcohol and finally local foci of infection, almost all of which conditions were lacking in the histories of the women patients.

The blood picture again showed a distinct contrast, for of the male cases all but one were below the normal limit, while of the women it was the exception to find anemia, and when it did exist there was present some other disease which could readily account for it.

The contrast of the two groups is further noted in the urine analyses and the renal functional tests. In the renal sclerosis of male cases the urine contained a cloud or heavy trace of albumin and many hyaline and granular casts, the phthalein was considerably impaired and the blood-urea nitrogen slightly increased. On the other hand the cases in women showed, as a rule, but a faint trace of albumin, with hyaline casts in a few instances. The phthalein was impaired only when cardiac weakness had developed and the blood-urea nitrogen remained normal throughout. It was also normal even during periods of forced proteid feeding (Hopkins and Jonas[6]). There was quite a variation in the specific gravity of morning and evening samples in both groups.

I could cite other points of contrast in my endeavor to differentiate between these two types of hypertension, but I believe the above points are adequate to substantiate the differentiation, and to place, as a distinct entity, the hypertension of the menopause, which one might style endocrinal hypertension.

So far as I have been able to elicit from this survey of several hundred hypertension cases the true type of what has been called "benign" or "essential" hypertension, *i. e.*, hypertension without arterial or arteriolar sclerosis, is to be found only in women at or following the menopause. It may exist for a number of years without any distinguishable sclerosis, but in later years, *i. e.*, as a rule, from fifty-five to sixty years, sclerosis tends to develop and the ultimate termination is either a cerebral hemorrhage or a cardiac death. Throughout its course there is no evidence of kidney disease.

A brief presentation of a few typical cases may be of interest:

CASE I.—Miss M., aged fifty years, was admitted to the University Hospital owing to attacks of vomiting and weakness. She had never been ill before the onset of the above symptoms, which developed along with evidences of the menopause. She had been subject to many worries for years. Naturally of a nervous temperament, the nervousness had become aggravated with the onset of the attacks of nausea and vomiting. Palpitation was troublesome at times. She was chronically constipated. Physical examination revealed the following: Blood-pressure: systolic, 245; diastolic,

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[6] Studies in Renal Function, with Special Reference to Non-protein Nitrogen and Sugar Concentration in the Blood, Phenolsulphonephthalein Elimination and Blood-pressure, Arch. of Int. Med., June, 1915, xv, 964–973.

125. Slight exophthalmos; thyroid enlarged. The heart was enlarged to the left and there was a slight systolic murmur at the mitral area, with accentuation of the aortic second sound. No peripheral sclerosis, and the eye-grounds were negative. The urine showed a specific gravity of 1017, there being neither albumin nor casts. Renal functional tests were also negative; phthalein elimination 70 per cent., and the blood-urea nitrogen 12 mg.

With rest and treatment the pressure fell to systolic, 170; diastolic, 90; and the patient became very much improved.

CASE II.—Miss P., aged forty-nine years, complained on admission of pains in the lower limbs. She had always been healthy aside from one attack of influenza and tonsillitis, and at twenty-nine years an exophthalmic goitre of several months' duration. Her menopause occurred nine years ago. She had been subject to hard work and many worries for years. Her present trouble she dates back two years, recurrent attacks of pain down the lower limbs being the chief complaint. Dyspnea on exertion and slight edema of ankles were noted on admission, and at times she was subject to headache.

Physical Examination: General appearance robust and obese (weight, 187 pounds). Blood-pressure: systolic, 195; diastolic, 120. Blood picture normal. Cardiac outline increased slightly to the left. Accentuation of aortic and pulmonic second sounds. No peripheral sclerosis, and the eye-grounds were normal. The urine showed a specific gravity of 1015, with neither albumin nor casts, and the phthalein elimination was 55 per cent.

Here again after treatment the pressure fell to systolic, 145; diastolic, 75, and there was marked improvement in the patient's condition.

These two hospital cases present interesting features in that their past histories were quite as negative as that of the average normal woman of their age. They had both been subject to nervous strain for years. In one the symptoms developed with the menopause and in the other not for several years later. In one the thyroid was enlarged and in the other there was the history of exophthalmic goitre in the past.

Peripheral and retinal arteriolar fibrosis were absent in both and renal function was normal.

CASE III.—Miss C. S., aged fifty-three years, first consulted me a year ago, complaining of stomach trouble. For four years prior to that she had been subject to intense nervousness, nausea, fermentation and constipation. She was also troubled with numbness and tingling in the limbs. All these symptoms developed with the onset of the menopause. She had been subject to worries for years. Her past medical history was negative aside from an attack of tonsillitis years ago.

Physical examination revealed the following: Well-nourished—

in fact, rather obese—woman, apparently in good health. Blood-pressure: systolic, 235; diastolic, 130. Blood picture normal, cardiac outline normal, systolic murmur at aortic and mitral areas with accentuation of aortic second sound. No evidence of fibrosis of peripheral or retinal vessels. The urine showed a specific gravity of 1025 and a trace of albumin but no casts.

Case IV.—Miss A. M., aged fifty years, consulted me about two years ago, complaining of fatigue and nervousness, both of which she had noticed in varying degrees for four years, during which time and preceding it for three years she was troubled with hot flushes and menstrual irregularities. She was also subject to vague pains in the back. Her past medical history was negative.

Physical examination revealed a very robust, healthy looking woman. Blood-pressure: systolic, 250; diastolic, 140. Blood picture normal. No apparent increase in cardiac outline. Slight systolic whiff at the aortic and mitral areas, with accentuation of the aortic second sound. No evidence of peripheral or retinal arteriolar changes. The urine showed a specific gravity varying from 1011 to 1018, with a slight trace of albumin and no casts. Phthalein elimination, 82 per cent.

Under treatment her blood-pressure was readily controlled, though fatigue or excitement produced marked rises.

The last two cases are very typical of the office group, both occurring in patients of the better class and of the high-strung, intense, nervous type, and finally both being robust and without evidence of renal involvement or vascular changes.

Now in contrast it may be well to cite one of eleven cases kindly furnished me by Dr. Stengel, which would seem to illustrate the influence of gout on the vascular system, with possibly the superimposed influence of the absence of ovarian secretion and its consequent results.

Case V.—Mrs. Y., aged sixty-one years, complained of pain and swelling of joints for the past five years. She was subject to headache, vertigo, palpitation, dyspnea and edema. Her past medical history was negative, aside from recurring attacks of gout and an operation for the removal of both ovaries, sixteen years ago, for a uterine tumor.

Physical examination revealed a well-nourished woman with very evident gouty changes in her joints. Blood-pressure: systolic, 310; diastolic, 160. Peripheral vessels markedly sclerosed and advanced arterial changes in the retina. The urine showed a specific gravity varying from 1007 to 1036, with a trace of albumin and an occasional hyaline cast. Phthalein elimination, 64 per cent. This case falls within the so-called hyperpiesia group or Janeway's cardiovascular group, but the advanced sclerosis and the past and present history of gout would readily exclude it from the group of menopausal hypertension cases above described.

The influence of castration in the occasional case in this series is interesting, but my data concerning it is, so far, too inadequate to permit of an expression of opinion.

Now, by way of contrast, I will go one step farther by citing two male cases, which by Allbutt and Meara would be classed under benign or essential hypertension, but which should be classified, I believe, in Stengel's group of renal sclerosis or the group of arteriolar fibrosis of Gull and Sutton.

Case VI.—Mr. H., aged fifty-seven years, entered the University Hospital complaining of dyspnea and epigastric pain. These symptoms developed five months before, and gradually he noted vague pains in the limbs, palpitation, edema and constipation. His past medical history included scarlet fever, measles, gout, syphilis, Neisserian infection and the abuse of alcohol.

Physical examination revealed a well-nourished male of 170 pounds weight. Pus pockets at roots of the teeth. Blood-pressure: systolic, 175; diastolic, 130. Hemoglobin, 85 per cent. Cardiac area enlarged and heart sounds weak. Marked sclerotic changes in peripheral vessels. Wassermann reaction negative. The urine showed a specific gravity of 1010, with a trace of albumin and hyaline and granular casts. Blood-urea nitrogen 27 mg. and phthalein elimination 45 per cent.

Is there not sufficient cause for renal damage in this man's past history? The blood-urea nitrogen is only very moderately increased and the phthalein moderately reduced, but in spite of quite fair renal function it would seem inevitable that the fibrosis should have involved the renal vessels to a fairly marked degree.

To select another illustration from the group of male cases:

Case VII.—Mr. G., aged fifty-four years, was admitted to the University Hospital in an unconscious condition. Prior to this sudden attack of unconsciousness he had noticed some weakness and occasional blurring of vision, but no other symptoms. His past medical history included repeated attacks of acute rheumatic fever and the abuse of alcohol, besides having done heavy physical work for years.

Physical examination revealed a male of medium build. Blood-pressure: systolic, 195; diastolic, 110. Hemoglobin, 70 per cent. Pus pockets at roots of several teeth. Cardiac area enlarged and muscle tone poor. Peripheral and retinal arteriolar sclerosis advanced. The urine showed a specific gravity of 1013, with a cloud of albumin and many hyaline and granular casts. Blood-urea nitrogen 20 mg. and phthalein elimination 50 per cent. Here, as in the above case (No. VI), we have marked fibrosis of the vessels, albumin and casts in abundance, yet fair renal functional tests. But here also, as above, the past medical history contains sufficient evidence to account for the general sclerotic changes and probably renal changes as well. Besides the histories, both patients had faulty dental conditions, which could in themselves furnish a local source of intoxication and contribute to the condition.

These cases, I think, illustrate clearly the contrast between arteriolar disease, with probable renal sclerotic changes on the one hand, and on the other the menopausal hypertension group, which seems to be in a class alone, and which, to me, represents the only true type of "benign" hypertension.

How correct the term "benign" is I question when I look back over the records of these patients for several years. They usually do well under treatment, but their desire to overdo and their naturally nervous temperament are their worst enemies.

ETIOLOGY. The etiology of this condition will bear investigation. I have shown above that these cases are usually free from the causative factors of arteriosclerosis and nephritis as accepted today. Overeating, as suggested by Allbutt, may be and probably is a contributing cause of "hyperpiesia," accepting that term in the sense in which he used it. I cannot see that it has been a contributing cause in this series of menopausal hypertensive cases.

Mental strain and worry and a naturally nervous temperament when superimposed on the profound emotional and bodily changes occurring at the time of the menopause would seem to be more naturally provocative of the trouble. Marriage and child-bearing seem to play no part, as many of the cases were single, and of the married, some had children and others had not.

To consider then the influence of the menopause on the production of this type of hypertension, certain established facts must be presented in support of this theory.

"The ductless glands by their correlation form a perfect physiological balance which is preserved by a proper distribution of harmony and antagonism between the functions of the various glands.

"If one of the glands is diseased or extirpated the normal balance is upset and the organism of the individual may be affected by the abnormal action of one or more distant glands of the group."

In considering the glands of internal secretion, I wish particularly to call attention to the adrenals, pituitary body, thyroid and ovaries.

The medulla of the suprarenal system elaborates the hormone adrenalin which influences the sympathetic nervous system, blood-pressure, the distribution of blood and the tonus of organs innervated by the sympathetic system. This hormone of the chromaffin system is in turn greatly influenced by conditions of emotional disturbance and certainly during the menopause, in some cases, the emotional disturbances are profound. The relation of the suprarenal system to the glands of sex is illustrated by the cortex, lipoid granules being present in it, just as they are in the interstitial and luetal cells of the ovary. Furthermore, the cortex enlarges during breeding and pregnancy (Vincent[7]).

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[7] The Experimental and Clinical Evidence as to the Influence Exerted by the Adrenal Bodies upon the Genital System, Surg., Gynec. and Obst., September, 1917, xxv, 294.

Functional activity of the hypophysis is closely related to that of the sex glands, extracts of the anterior lobe having a distinct influence on the sexual apparatus, and the gland enlarging during pregnancy. . Of further interest bearing on this subject of hypertension, extracts of the posterior lobe when administered clinically produce an elevation in blood-pressure.

"The ovary is recognized as a true organ of internal secretion. The corpus luteum in its full development presents the characteristic picture of an internal secretory gland. It develops at the age of puberty, and coincident with this is the appearance of the cyclical changes of menstruation, which changes disappear after the cessation of the corpus luteum formation at the climacteric. The atretic follicles are believed to be the further source of internal secretion of the ovary, the absence of the corpus luteum being sufficient evidence that there is some other portion of the ovary used for the primary source of the secretion. There is much to show that the action of the ovarian secretion is neither direct nor selective, but that it exerts only a balancing influence on other correlated and more powerful glands, the activity of which the ovarian secretion discharges or suppresses as the case may be. With the hypofunction of this gland we have not only to consider the effects of diminished secretory power, but also the changes wrought in the other members of the group, the balance of whose function has thus been disturbed.

Furthermore, the influence of castration after maturity has led to variations in sugar assimilation, coagulation time of the blood and chemical composition of the blood, as well as a tendency to adiposity.

"Variations in the size of the thyroid gland during certain phases of the female sexual life have been recognized for years. Marked enlargement at puberty, with associated palpitation and evidences of vasomotor disturbances, are attributed to a hypersecretion of the gland at this period. Early extirpation of the thyroid not only produces degenerative changes in the ovaries, but delays the time of puberty and limits the productivity of the individual, and, further, women with diseased thyroids usually have menstrual disorders.

"An interesting observation of Lange is that women in whom the thyroid does not swell exhibit a renal albuminuria, and he expresses the belief that the swelling of the thyroid acts as a protection against certain poisons which are set free as a result of pregnancy, and which, without the protection of the secretion from the hypertrophied thyroid, are injurious to the kidneys" (Graves[8]).

Several instances of exophthalmic goitre have occurred at the climacteric and have led to the suggestion that the neuropathic and vasomotor symptoms of the change of life are the result of hyperactivity of the thyroid gland.

Illustrative of the effect on the endocrine glands of emotional stress are the results of Etinne and Richard,[9] who observed several patients who had been in Nancy during repeated violent bombardment from big guns and aëroplanes. They cite the development of exophthalmic goitre in an acute form, with high blood-pressure in two women of twenty-four and thirty-four years. They also noted that in some women menstruation was arrested by the bombardments. In one man Addison's disease appeared and was followed by the symptoms of exophthalmic goitre, and in two other instances Addison's disease became superimposed on preëxisting exophthalmic goitre.

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[8] Gynecology, 1918.

These cases are especially interesting in that they show exophthalmic goitre of emotional origin may develop with suprarenal hyperfunctioning as well as with hypofunctioning, and, further, that the suprarenal trouble may also become superimposed on exophthalmic goitre.

The correlation of these glands I have dealt with at some length, noting the more important recent clinical and experimental evidence, with the intention of presenting, as the possible cause of menopausal hypertension, a disturbance in their functioning. As mentioned above the disease is lacking in any other clear-cut etiological factor.

At the menopause, with the withdrawal of at least a part of the internal secretion of the ovary from its place in the connecting link of endocrine glands, it would be a natural assumption to consider that a certain amount of depressor influence of the ovary was withdrawn from the adrenals, hypophysis and thyroid, leaving them, as it were, out of balance.

Knowing that there are produced in one or more of these glands substances that increase blood-pressure, influence the sympathetic nervous system (vasomotor system) and the sex glands, aid in regulating metabolism, and, finally, exhibit an intimate relationship with emotional disturbances, it does not seem improbable that the blood-pressure is, by a combination of these altered influences, raised and sustained at a high level. A persistently high pressure of this type will, in the course of years, produce fibrosis of the vessels, and this we have seen develops in the latter years of these patients, though I have known them in a few instances to reach sixty years and over without the slightest evidence of peripheral or retinal sclerosis. If a routine blood-pressure were taken of all women at the menopause I believe the results would be of great diagnostic and therapeutic benefit for the patients' future.

NOTE.—Prognosis and Treatment will be given in a later paper.

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[9] Exophthalmic Goitre and the Bombardments, Bull. de la Soc. méd. des Hôp., Paris, December 20, 1918, No. 36, xlii, 1196.